

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently amended) A method for preparing an internucleotide phosphorothioate linkage enriched in the Sp enantiomer between a synthon having a hydroxyl moiety at the 5' position and a 2'-substituted nucleoside having ~~an activated phosphate moiety~~ a phosphoramidite at the 3'-position comprising selecting a coupling agent having a pKa ranging from about 3.3 to about 4.5 and coupling said synthon to said 2'-substituted nucleoside in the presence of said coupling agent.
2. (Original) The method of claim 1 wherein said first synthon is bound to a support.
3. (Original) The method of claim 1 wherein said coupling agent has a pKa ranging from about 3.4 to about 4.4.
4. (Original) The method of claim 1 wherein said coupling agent has a pKa ranging from about 3.5 to about 4.3.
5. (Original) The method of claim 1 wherein said coupling agent has a pKa ranging from about 3.6 to about 4.3.
6. (Original) The method of claim 1 wherein said coupling agent has a pKa ranging from about 3.7 to about 4.3.

7. (Original) The method of claim 1 wherein said coupling agent is 5-(ethylthio)-1*H*-tetrazole.
8. (Original) The method of claim 1 wherein said 2'-substituent is attached to the 2'-position through an oxygen atom.
9. (Original) The method of claim 8 wherein said 2'-substituent is O-alkyl, O(CH₂)_nOCH₃, or O[(CH₂)_nO]_mCH₃, wherein n and m are from about 1 to about 10.
10. (Original) The method of claim 1 wherein said 2'-substituent is 2'-O-alkyl.
11. (Original) The method of claim 10 wherein said alkyl group is C₁ to C₁₂ alkyl.
12. (Original) The method of claim 11 wherein said alkyl group is methyl.
13. (Currently amended) The method of claim 9 wherein said 2'-substituent is O(CH₂)_nOCH₃ wherein n is from about 1 to about 3.
14. (Original) The method of claim 9 wherein said 2'-substituent is O(CH₂)₂OCH₃.
15. (Currently amended) The method of claim 1 wherein said ~~activated phosphate moiety~~ phosphoramidite comprises a *B*-cyanoethyl protecting group.

16. (Currently amended) The method of claim 1 wherein said ~~activated phosphate moiety~~
phosphoramidite comprises an acetoxy phenoxy ethyl group.

17-32. (Canceled)

¹⁷
~~33~~. (Currently amended) A method for preparing an oligonucleotide having at least one
region of internucleotide linkages that is enhanced in the Sp enantiomer comprising:
providing a nucleotide having a hydroxyl moiety at the 5'-position or a growing
oligonucleotide chain having a hydroxyl moiety at the 5'-position;
coupling said nucleotide or growing oligonucleotide chain to a 2'-substituted
nucleoside having an ~~activated phosphate moiety~~ a phosphoramidite at the 3'-position in the
presence of a coupling agent having a pKa ranging from about 3.3 to 4.5;
repeating said coupling step until the desired number of linkages is established.

¹⁸
~~34~~. (Original) The method of claim ¹⁷~~33~~ wherein said oligonucleotide having at least one
region of internucleotide linkages that is enhanced in the Sp enantiomer is further processed
to include another region of internucleotide linkages that is enhanced in the Sp enantiomer.

¹⁹
~~35~~. (Original) The method of claim ¹⁸~~34~~ wherein said oligonucleotide having at least one
region of internucleotide linkages that is enhanced in the Sp enantiomer is further processed
to include at least one region of internucleotide linkages that is enhanced in the Rp
enantiomer.

DOCKET NO.: ISIS-4785

PATENT

Application No.: 09/881,535

Office Action Dated: June 11, 2003

20.
26. (Original) The method of claim 19 wherein said oligonucleotide having at least one region of internucleotide linkages that is enhanced in the Sp enantiomer and at least one region that is enhanced in the Rp enantiomer is further processed to include another region of internucleotide linkages that is enhanced in the Sp enantiomer.

37-40. (Canceled)